

REMARKS

Claims 10-23 are all the claims pending in the application. Reconsideration and allowance of all the claims are respectfully requested in view of the following remarks.

Information Disclosure Statement (IDS)

On January 30, 2001, Applicants filed an IDS including a PTO form-1449 citing two US Patent references, a German reference, and an EPO reference. Although the Examiner initialed next to the US Patent references, he did not acknowledge consideration of the German or EPO reference, despite the fact that he relied upon the German reference to reject some of the claims. Because the IDS was timely filed, Applicants respectfully request that the Examiner return a properly initialed copy of the PTO form-1449 indicating consideration of all the references, including the German and EPO references.

Drawings

Submitted herewith are Formal Drawings that incorporate the changes approved by the Examiner in paper number 14 mailed on June 5, 2002.

Claim Rejections - 35 U.S.C. § 112

The Examiner rejected claims 10-23 under §112, 2nd paragraph, as indefinite. Specifically, the Examiner asserted that it is unclear where the preamble ends and the body begins. Applicants have amended claims 10, 11, 14, and 18, so as to insert a transition phrase thereby making it clear where the preamble ends and the body of the claim begins. Further, although other clarifying amendments have been made, such amendments do not narrow the scope of the claims.

Claim Rejections - 35 U.S.C. § 103

- The Examiner rejected claims 10-23 under §103(a) as being unpatentable over EP 0 748 683 to Takahashi et al. (hereinafter Takahashi) in view of JP 59-85729 to Ichikawa

(hereinafter Ichikawa) or DE 3 843 342 to Biffar (hereinafter Biffar) and further in view of US Patent 5,807,588 to Todaka et al. (hereinafter Todaka). Applicants respectfully traverse this rejection because there is no motivation to combine the references as suggested by the Examiner.

First, there is no motivation to combine Ishikawa's plunger with the other cited references in the manner suggested by the Examiner. The Examiner asserts that the motivation for combining Ishikawa with Takahashi is that such would "enable the back pressure of the metering screw to be more freely adjustable as compared to conventional screw extruders".¹ But Ishikawa states that adjustment of the back pressure of the metering screw is accomplished by "making the screw to be movable in the axial direction".² That is, Ishikawa axially moves the screw between the positions shown in Figs. 3 and 4 in order to adjust the back pressure. Therefore, one of ordinary skill in the art following the teachings of Ishikawa would have been motivated to make the screw of Takahashi axially movable; he would not have been motivated to use a plunger, as suggested by the Examiner. Indeed, Ishikawa discloses that the reason for using a plunger is to sufficiently knead a resin "without causing resin leakage or the inflow of the resin into a mold".³ Therefore, because Takahashi does not require a mold, one of ordinary skill in the art would not have been motivated to incorporate Ishikawa's plunger therein.

Second, there is no motivation for combining Biffar with the other cited references in the manner suggested by the Examiner. The Examiner asserts that the motivation for combining Biffar with Takahashi is that such would "provide extrusion means that provide a simple way to discharge plastic without major temperature loss".⁴ But Biffar teaches that such an advantage is

¹ Office Action at page 4, lines 7.

² Ishikawa at English Abstract, lines 1 and 2.

³ English translation of Ishikawa at page 2, lines 4-6, and page 3, lines 16-20. Note, an English translation of Ishikawa was provided to the PTO with the Amendment filed on March 11, 2002.

⁴ Office Action at page 4, lines 1-4 and 8-9.

provided by discharging plastic directly into a mold 7 from a heated feed line 3.⁵ Therefore, one of ordinary skill in the art following the teachings of Biffar would provide Takahashi with a heated feed line from the screw to the discharge nozzle; he would not have been motivated to provide Takahashi with a plunger, as suggested by the Examiner.

Accordingly, because there is no motivation for combining either Ishikawa or Biffar with Takahashi, these references fail to render obvious Applicants' claims 10-23.

Claim Rejections - 35 U.S.C. § 102

- The Examiner rejected claims 10 and 11 under §102(b) as being anticipated by Ishikawa. Applicants respectfully traverse this rejection because Ishikawa fails to disclose every element as set forth in Applicants' claims.

Claim 10 sets forth a method for forming a resinous frame comprising extruding, not into a mold, a resinous material from a die with a nozzle having a certain cross-sectional shape so that said resinous material is formed with a certain cross-sectional shape substantially conforming to the cross-sectional shape of the nozzle.

In contrast to that set forth in claim 10, Ishikawa discloses a molding method wherein a mold is used to shape the resinous material. In the English translation of Ishikawa, he states that it is an object of his invention to sufficiently knead a resin "without causing resin leakage or the inflow of the resin into a mold".⁶ Further, Ishikawa does not disclose that the resin is extruded so as to have a cross-sectional shape substantially conforming to that of the nozzle 5. Therefore, Ishikawa fails to disclose a method for forming a resinous frame, wherein a resinous material is extruded, not into a mold, from a die with a nozzle having a certain cross-sectional shape to be

⁵ See the English translation of Biffar at: page 1, 4th to 6th paragraphs; page 3, 1st full paragraph; and page 3, last 3 lines. Note, an English translation of Biffar was provided to the PTO in an Amendment filed on March 11, 2002.

⁶ English translation of Ishikawa at page 2, lines 4-6, and page 3, lines 16-20.

formed so as to have a certain cross-sectional shape substantially conforming to the cross-sectional shape of the nozzle, as set forth in claim 10.

Claim 11 sets forth a method for forming a resinous frame comprising extruding a resinous material from a die with a nozzle having a certain cross-sectional shape so that said resinous material is formed with, and retains, a certain cross-sectional shape of the nozzle.

In contrast to that in claim 11, Ishikawa discloses extruding a resinous material from a nozzle 5 and into a mold. Therefore, because the resinous material is extruded into a mold, although it may initially have the cross-sectional shape of the nozzle, it does not retain the cross-sectional shape of the nozzle, as set forth in Applicants' claim 11. Instead, the resinous material takes on the shape of the mold into which it is inserted.

For the above reasons, claims 10 and 11 are not anticipated by Ishikawa.

- The Examiner rejected claims 10-13 under §102(b) as being anticipated by Biffar. Applicants respectfully traverse this rejection because Biffar fails to disclose every element as set forth in Applicants' claims.

Again, claim 10 sets forth a method for forming a resinous frame comprising extruding, not into a mold, a resinous material from a die.

In contrast to that set forth in claim 10, Biffar discloses a molding method wherein a press mold 7, 8, 28 is used to shape the resinous material. Biffar states that according to his invention, it is possible to feed plastic into the mold in a hotter, more liquid state when it can be better and more easily shaped."² Biffar also states that it is possible to use different rates of motion or changes in the cross section of the mouthpiece 25, but notes that such changes are advantageous "to discharge defined accumulations of material, which are advantageous with

² English translation of Biffar at page 1, 6th full paragraph.

respect to a desired pressed shape.”⁸ Throughout the specification, Biffar makes reference to the mold and the pressing of the plastic mass to form the desired shape.⁹ Although Biffar states that defined discharge shapes can be obtained by adjusting the cross-section of mouthpiece 25, he makes no mention of forming a frame without a mold.¹⁰ That is, as noted earlier, such a change in cross-sectional shape of the mouthpiece is done so as to discharge defined accumulations of material, which is advantageous with respect to a desired pressed shape.¹¹ Therefore, Biffar fails to disclose extruding, not into a mold, a resinous material from a die, as set forth in claim 10.

Again, claim 11 sets forth a method for forming a resinous frame comprising extruding a resinous material from a die with a nozzle having a certain cross-sectional shape so that said resinous material is formed with, and retains, a certain cross-sectional shape of the nozzle.

In contrast to that in claim 11, Biffar discloses extruding a resinous material from a nozzle 25 and into a mold 7, 8, 28. Therefore, because the resinous material is extruded into a mold, although it may initially have the cross-sectional shape of the nozzle, it does not retain the cross-sectional shape of the nozzle, as set forth in Applicants’ claim 11. Instead, the resinous material takes on the shape of the mold into which it is inserted.

For the above reasons, claims 10 and 11 are not anticipated by Biffar.

⁸ English translation of Biffar at page 1, 7th paragraph, lines 5-8.

⁹ English translation of Biffar at: page 2, 6th full paragraph; paragraph bridging pages 2 and 3; page 3, second and third full paragraphs; sentence bridging pages 3 and 4; and the 3rd through 5th full paragraphs on page 4.

¹⁰ English translation of Biffar at page 4, 5th full paragraph, lines 5-7.

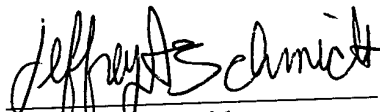
¹¹ English translation of Biffar at page 1, 6th full paragraph, lines 5-8.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jeffrey A. Schmidt", written over a horizontal line.

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

10. (Amended) A method for forming a resinous frame comprising:

[wherein] extruding, not into a mold, a resinous material [is extruded] from a die with a nozzle having a certain cross-sectional shape [to be formed] so that said resinous material is formed with [as to have] a certain cross-sectional shape substantially conforming to the cross-sectional shape of the nozzle [, characterized in that] ; and

injecting, with an injection machine having a plunger that is provided upstream of the die, [the injection machine injects] the resinous material toward the die [, and] so that the resinous material is extruded through the die.

11. (Amended) A method for forming a resinous frame comprising:

[wherein] extruding a resinous material [is extruded] from a die with a nozzle having a certain cross-sectional shape [to be formed] so that said resinous material is formed with, and retains, [as to have] a certain cross-sectional shape of the nozzle [, characterized in that an injection machine is provided on an upstream side of the die,] ;

supplying a resinous material [, which is supplied] through a resinous material hopper of [the] an injection machine [,] provided on an upstream side of the die;

feeding, with a metering screw, a certain amount of the supplied resinous material [is fed] into a plunger chamber of the injection machine [by a metering screw at a certain amount,] ; and

injecting, with the plunger at a certain pressure, the fed resinous material [, fed into the plunger chamber is injected] toward the die [by the plunger at a certain pressure, and] so as to extrude the resinous material [is extruded] through the nozzle of the die.

14. (Amended) A method for preparing a panel with a resinous frame, comprising:
[wherein while] relatively moving a die for extruding a resinous material and a peripheral edge of a panel [,] ;
extruding, during said step of relatively moving, a resinous material [is extruded] through a nozzle provided in the die, wherein said nozzle has [and having] a certain cross-sectional shape[,] ;
forming [and] the extruded resinous material [is formed] on the peripheral edge of the panel so as to have a certain cross-sectional shape substantially conforming to the cross-sectional shape of the nozzle [, characterized in that an injection machine is provided on an upstream side of the die, and] ;
supplying a resinous material [, which is supplied] through a resinous material hopper of [the] an injection machine provided on an upstream side of the die [, is fed] ;
feeding, with a metering screw, a certain amount of the supplied resinous material into a plunger chamber of the injection machine [by a metering screw at a certain amount, and that while] ;
controlling an injection amount of the resinous material in response to a relative moving speed between a peripheral edge of the panel and the die [,] ; and
injecting with a plunger, during said controlling, the fed resinous material [fed into the plunger chamber is injected] toward the die [by a plunger] so as to be extruded onto the peripheral edge of the panel through the nozzle of the die.

18. (Amended) A method for preparing a panel with a resinous frame unified to a peripheral edge thereof, comprising:

extruding [wherein] a resinous material [is extruded] from a die with a nozzle having a certain cross-sectional shape so that said resinous material is [to be] formed with [so as to have] a certain cross-sectional shape substantially conforming to the cross-sectional shape of the nozzle [.] ;

drawing the extruded and formed resinous material [is drawn] into a pressing member [.] ;

[and wherein while] relatively moving a panel and the pressing member so that the pressing member moves along a peripheral edge of the panel [.] ;

unifying, during the relatively moving, the extruded and formed resinous material [is unified] to the peripheral edge [by] with the pressing member [, characterized in that] ;

supplying a resinous material through a resinous material hopper of an injection machine [is] provided on an upstream side of the die [, and]

feeding, with a metering screw, a certain amount of the supplied [a] resinous material [, which is supplied through a resinous material hopper of the injection machine, is fed] into a plunger chamber of the injection machine [by a metering screw at a certain amount.] ;

[that while] controlling an injection amount of the resinous material in response to a relative moving speed between a peripheral edge of the panel and the die [.] ; and

injecting with a plunger, during said controlling, the fed resinous material [fed into the plunger chamber is injected] toward the die [by a plunger] so as to be extruded onto the peripheral edge of the panel through the nozzle of the die.